AMENDMENTS TO THE CLAIMS

A list of claims follows, including those to be amended:

1. (Currently Amended) A process of polymerizing olefins comprising contacting, in a reactor:

(a) ethylene and at least one comonomer selected from the group consisting of C_4 to C_8 alpha olefins; and

(b) a supported catalyst system comprising a metallocene catalyst compound activated by methylaluminoxane, and a support material, the methylaluminoxane being present in the range of from 3 to ~~9~~ 7.7 mmole methylaluminoxane per gram of support material, the metallocene being present in the range of from ~~0.01~~ 0.04 to ~~1.0~~ 0.1 mmole metallocene per gram of support material;
wherein ~~the catalyst has an activity of at least 7,500 grams polyethylene per gram of catalyst compound per hour; and~~ the process produces a polyethylene polymer having a bulk density of at least 0.30 gram/cubic centimeter; and
wherein the support material is selected from the group consisting of silica, alumina, silica-alumina, magnesium chloride, graphite, and mixtures thereof, and wherein the metallocene catalyst compound is a substituted bis-cyclopentadienyl zirconocene catalyst compound comprising at least one fluoride or fluorine containing leaving group.

2. (Original) The process of claim 1 wherein the polymerization process is a gas phase process.

3. (Original) The process of claim 1 wherein the polymerization process is a slurry process.

4. (Cancelled)

5. (Cancelled)

6. (Cancel) The process of claim 1 wherein the reactor demonstrates a Fouling Index in the range of less than or equal to 2.

7. (Original) The process of claim 6 wherein the methylaluminoxane is present in an amount in the range of from 4 to 7.7 mmole methylaluminoxane per gram of support material.

8. (Original) The process of claim 7 wherein the methylaluminoxane is present in an amount in the range of from 5 to 6.5 mmole methylaluminoxane per gram of support material.

9. (Original) The process of claim 8 wherein the methylaluminoxane is present in an amount in the range of from 6 to 6.5 mmole methylaluminoxane per gram of support material.

10. (Cancelled)

11. (Original) The process of claim 10 wherein the metallocene catalyst compound is present in an amount in the range of from 0.05 to 0.08 mmole metallocene per gram of support material.

12. (Original) The process of claim 11 wherein the metallocene catalyst compound is present in an amount in the range of from 0.06 to 0.07 mmole metallocene per gram of support material.

13. (Original) The process of claim 1 wherein the catalyst has an activity of at least 5,000 grams polyethylene per gram of catalyst compound per hour.

14. (Cancelled)

15. (Original) The process of claim 6 wherein the Fouling Index is less than or equal to 1.

16. (Original) The process of claim 15 wherein the Fouling Index is 0.

17. (Original) The process of claim 1 wherein the polymer produced has a bulk density of at least 0.4 grams per cubic centimeter.

18. (Original) The process of claim 17 wherein the polymer produced has a bulk density of at least 0.48 grams per cubic centimeter.

19. (Original) The process of claim 1 wherein the metallocene catalyst compound is selected from the group consisting of: bis(1,3-methyl-n-butylcyclopentadienyl) zirconium difluoride; bis(n-propylcyclopentadienyl) zirconium difluoride; (tetramethyl cyclopentadienyl) (n-propyl cyclopentadienyl) zirconium difluoride; and (pentamethyl cyclopentadienyl) (n-propyl cyclopentadienyl) zirconium difluoride.

20. (Original) The process of claim 1 wherein an antistatic agent is absent or substantially absent from the catalyst composition.

21. (Original) The process of claim 20 wherein the support material has a surface area in the range of from 150 to 450 m^2/gram.

22. (Original) The process of claim 20 wherein the support material has a pore volume in the range of from 1 to 2.5 cm^3/gram.

23. (Original) The process of claim 20 wherein the support material has an average particle size in the range of from 10 to 50 μm.

24. (Original) The process of claim 1 wherein an antistatic agent is present in the catalyst composition in an amount less than 4 % by weight of the catalyst composition.

25. (Original) The process of claim 24 wherein the antistatic agent is present in the catalyst composition in an amount in the range of from 0 % to 2 % by weight of the catalyst composition.

26. (Original) The process of claim 1 wherein the support material has a surface area in the range of from 150 to 450 m^2/gram.

27. (Original) The process of claim 26 wherein the support material has a surface area in the range of from 250 to 400 m^2/gram.

28. (Original) The process of claim 27 wherein the support material has a surface area in the range of from 300 to 350 m^2/gram.

29. (Original) The process of claim 1 wherein the support material has a pore volume in the range of from 1 to 2.5 cm^3/gram.

30. (Original) The process of claim 29 wherein the support material has a pore volume in the range of from 1.25 to 2.0 cm^3/gram.

31. (Original) The process of claim 30 wherein the support material has a pore volume in the range of from 1.5 to 1.75 cm^3/gram.

32. (Original) The process of claim 1 wherein the support material has an average particle size in the range of from 10 to 50 μm.

33. (Original) The process of claim 32 wherein the support material has an average particle size in the range of from 15 to 40 μm.

34. (Original) The process of claim 33 wherein the support material has an average particle size of from 20 to 30 μm.

35.-74. (Cancelled)